

Appl. No. 09/815503

B – Amendments to the Specification

Please replace the paragraph beginning at page 1, line 4, with the following paragraph:

-- BACKGROUND OF THE INVENTION

The present invention relates to a method of determining parameters of formations through which a borehole passes, and more particularly to such a method of determining parameters on the basis of a resistivity log recorded in said borehole by means of a measuring and recording tool, said method comprising the steps consisting in: --

Please replace the paragraph beginning at page 3, line 37, with the following paragraph:

-- SUMMARY OF THE INVENTION

Furthermore, when the method is used on real logging data, instabilities are observed which are the result of the local nature of the inversion. --

Please replace the paragraph beginning at page 5, line 30, with the following paragraph:

-- BRIEF DESCRIPTION OF THE DRAWINGS

A particular implementation of the invention is described below by way of non-limiting example and with reference to the accompanying diagrammatic drawings, in which:--

Please replace the paragraph beginning at page 5, line 35, with the following paragraph:

-- DESCRIPTION OF THE PREFERRED EMBODIMENTS

As shown in Figure 1, implementation of the method of the invention begins by a step 1 of measuring various physical magnitudes of the formation from inside a borehole. At each measurement level, the number of magnitudes measured in this way must be not less than the number of parameters for which it is desired to obtain a value at each level. --

Please replace the abstract of the disclosure with the following abstract:

-- The invention relates to a method of determining parameters of formations through which a borehole passes, on the basis of a resistivity log (20) recorded in the borehole by means of a measuring and recording tool, the method comprising the steps consisting in:

determining the formation parameters by a parameter inversion method so as to obtain a model of the formations;

calculating (17) the response of the tool to the model;

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using a comparison criterion for comparing (19) the calculated response with the recorded log; and
performing at least one new iteration if the comparison criterion is not satisfied;
the method being characterized by the fact that:
step (11) of determining the parameters from log data is performed by a quasi-Newton method; and
the quasi-Newton method is implemented on pseudo-parameters (12) that are homogeneous and that are determined from the formation parameters. --

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